CLAIMS

1. An optical attenuator for attenuating signals in an optical path, comprising:

an input port for receiving input signals from an input fiber along the optical path;

an output port for splitting the attenuated signals into two portions, and for transmitting one portion of the attenuated signals to an output fiber, also along the optical path, and for transmitting a second portion of the attenuated signals to a detecting means;

at least one movable reflector for receiving first signals output by the input port and reflecting a portion of said first signals into the output port;

said detecting means being positioned to receive said second portion of the attenuated signals from the output port; and

a driving device for driving the movable reflector in response to control signals from the detecting means.

2. The optical attenuator as claimed in claim 1, wherein the input port comprises a first collimator and a filter.

3. The optical attenuator as claimed in claim 2, wherein the filter has a 0.5 percent reflective ratio.

4. The optical attenuator as claimed in claim 2, wherein the first collimator retains an end of the input fiber and an end of a second fiber, and said second fiber receives a part of the input signals reflected by the filter and transmits said part of the input signals reflected by the filter to the detecting means, and said detecting means uses said part of the input signals reflected by the filter together with said

second portion of the attenuated signals from the output port to drive the driving device which moves the movable reflector.

5. The optical attenuator as claimed in claim 1, wherein the output port comprises a second collimator.

6. The optical attenuator as claimed in claim 1, wherein the detecting means includes a photodiode.

7. An optical attenuator for attenuating signals in an optical path, comprising:

an input port for receiving input signals from an input fiber along the optical path and for reflecting part of the input signals to a first detecting means;

an output port for splitting the attenuated signals into two portions, and for transmitting one portion of the attenuated signals to an output fiber, also along the optical path, and for transmitting a second portion of the attenuated signals to a second detecting means;

at least one movable reflector for receiving first signals output by the input port and reflecting a portion of said first signals into the output port;

said first detecting means being positioned to received said reflected part of the input signals from the input port;

said second detecting means being positioned to receive said second portion of the attenuated signals from the output port; and

a driving device for driving the movable reflector in response to control signals from the first and the second detecting means.

8. The optical attenuator as claimed in claim 7, wherein the input port comprises a first collimator and a filter.

9. The optical attenuator as claimed in claim 8, wherein the filter has a 0.5

percent reflective ratio.

10. The optical attenuator as claimed in claim 8, wherein the first collimator retains an end of the input fiber and an end of a second fiber, and said second fiber receives the reflected part of the input signals.

11. The optical attenuator as claimed in claim 7, wherein the output port comprises a second collimator.

12.The optical attenuator as claimed in claim 7, wherein the first and second detecting means includes a photodiode.

13. An optical attenuator for attenuating signals in an optical path, comprising:

an input port connected to an input fiber, the input fiber being a component of the optical path, the input port being for receiving an input signal from the input fiber;

an output port connected to an output fiber, the output fiber also being a component of the optical path, the output port being for transmitting an output signal to the output fiber;

at least one movable reflector forming an optical connection between the input port and the output port;

a detecting means optically connected to the input port and to the output port and comprising components for detecting the intensity of optical signals from the input and output ports, circuitry for comparing the input signal to the output signal, and control circuitry ; and

a driving device electrically connected to the control circuitry of said detecting means and mechanically engaged with the at least one movable

reflectors;

whereby the input port transmits a fraction of the input signal, as a first control signal, to the detecting means and transmits the remainder of the input signal, as a first signal, to the at least one movable reflectors, the at least one movable reflectors direct the first signal toward the output port as a second signal, and some fraction of the second signal, determined by the relative spatial and angular geometry of the at least one movable reflectors, is received by the output port as a received signal, and the output port transmits one portion of the received signal as the output signal and transmits the remaining portion of the received signal as a second control signal, to the detecting means, the detecting means measures the intensities of the first and second control signals, makes a comparison of the intensities, and as a result causes its control circuitry to issue driving control signals to the driving device, which actuates the at least one movable reflectors to rotate, changing the intensity of the received signal at the output port.

14. The optical attenuator as claimed in claim 13, wherein the at least one movable reflector is one movable reflector.

15. The optical attenuator as claimed in claim 14, further comprising a fixed reflector which, in conjunction with the movable reflector, forms the optical connection between the input port and the output port.

16. The optical attenuator as claimed in claim 13, wherein the input port comprises a first collimator and a filter.

17. The optical attenuator as claimed in claim 13, wherein the output port comprises a second collimator and a splitter.

18. An optical attenuator comprising:

an input port receiving input signals form an input fiber;

an output port transmitting output signals to an output fiber;

a transmission device positioned in a light path transmitted between the input port and the output port, said transmission device adjustably attenuating transmitted signals moving along said light path;

a driving device moving said transmission device for attenuation adjustment; and

detecting means receiving signals from the input port and those from the output port to define an attenuation ratio thereof for determining actuation of the driving device.

19. The attenuator as claimed in claim 18, wherein the first port includes a first collimator facing to said transmission device, and the second port includes a second collimator, different from the first collimator, facing to said transmission device.

20. The attenuator as claimed in claim 18, wherein the signals said detecting means receives from the input port, are reflected from the first port; while the signal said detecting means receives from the output port, are directly derived from one outgoing port of a splitter of said output port, the output fiber being connected to the other outgoing port of said splitter.